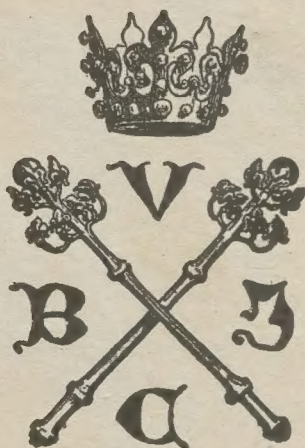




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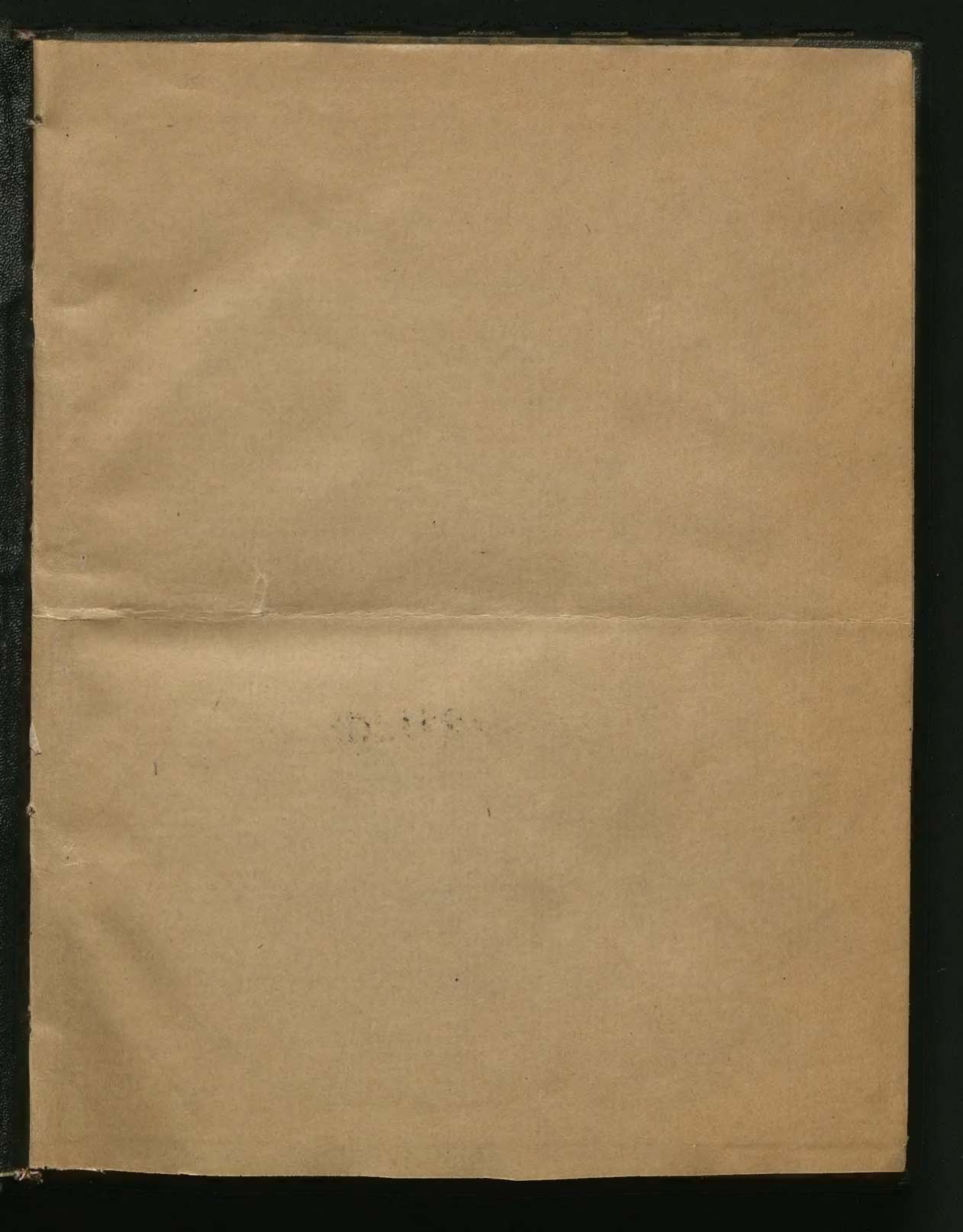
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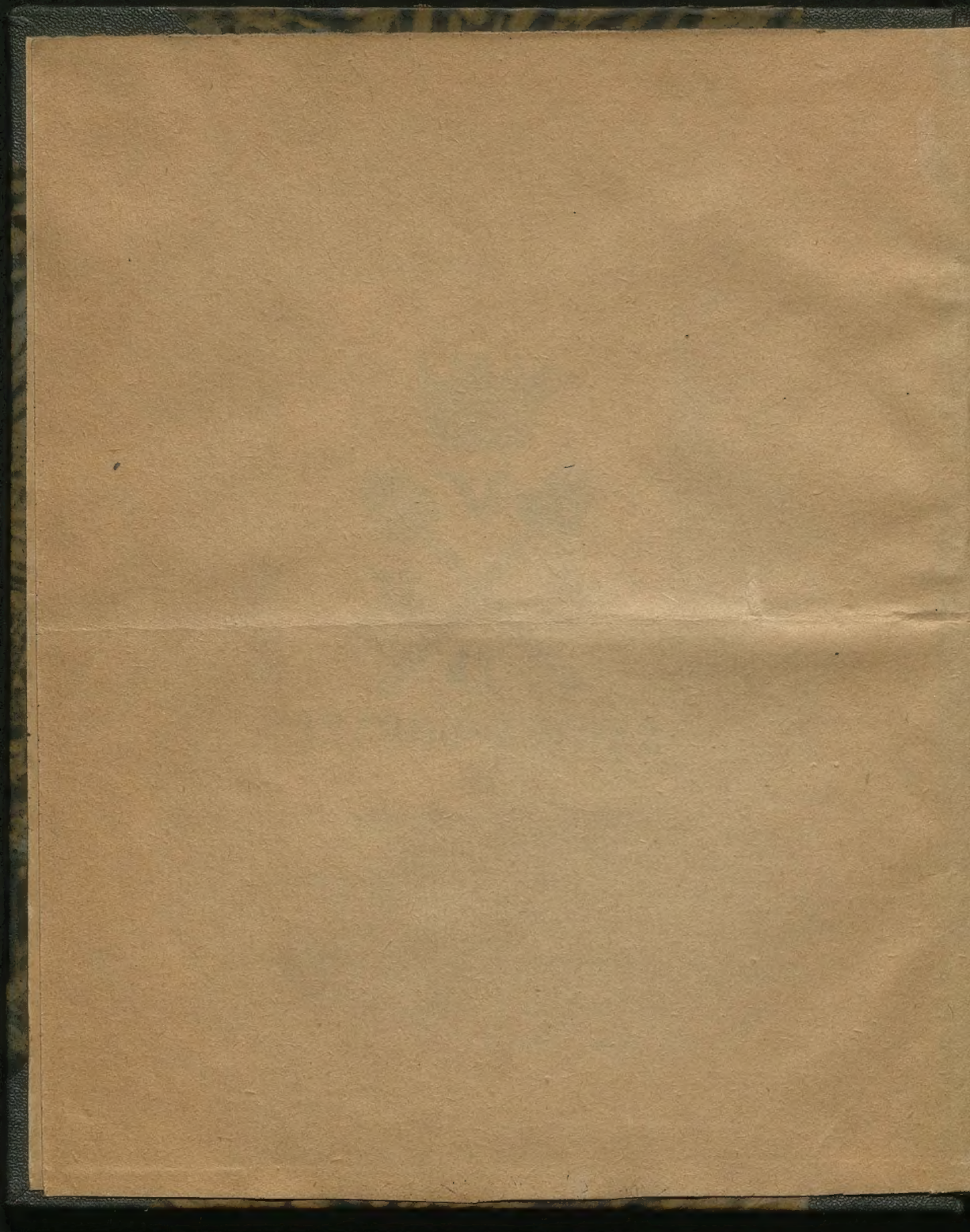
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Falsitas stupenda rationum diametri ad peripheriam à Metio, Ludolpho & ab Archimede publicatarum, undque ratio vera, ut 8 : 25 ad captum cujuslibet rigorosissime demonstrata. Varaviae 1786.

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THEOREMA I. Peripheria diametri 8 per rationem Metii 113 : 355 inventa peccat $\frac{1}{113}$ diametri in excessu.

Demonstratio. Peripheria diametri 8 per dictam rationem inventa, est $\frac{2840}{113}$; peripheria defectiva per rationem 1 : 3 reperta, est $\frac{24}{1}$, quæ reducta ad denominatorem 113 peripheriæ Metianæ, prodit æquivalentem $\frac{2712}{113}$, quæ ablata ex Metiana, relinquitur differentia $\frac{128}{113}$, quæ est conflata, ut mox constabit, ex defectu æquivalentis & excessu Metianæ: nam quoniam ob reductionem defectivæ $\frac{24}{1}$ ad denominatorem 113, termini defectus in æquivalente continentur multiplicati per 113; sed nulla alia pars differentiæ est reducibilis per 113, nisi $\frac{128}{113}$; ergo hæc pars est defectus peripheriæ æquivalentis per legitimum ratiocinandi modum inventus. Jam si peripheria Metiana foret justa, esset defectus æqualis differentiæ; quia ablata peripheriâ defectivâ ex vera, relinquitur differentia, quæ est ipsemet defectus; sed quoniam ablato defectu $\frac{128}{113}$ ex differentia $\frac{128}{113}$, remanent adhuc $\frac{1}{113}$; debet hæc pars necessariò esse excessus; ex quo evidens est, differentiam esse conflata ex excessu $\frac{1}{113}$ periph: Metianæ & defectu $\frac{128}{113}$ æquivalentis, qui reductus per denominatorem 113 Metianæ ad terminos minimos, sistit defectum quæsitum $\frac{1}{113}$. Ergo peripheria vera est $\frac{2840}{113} - \frac{1}{113} = \frac{2839}{113} = 25$; vel $\frac{24}{1} + \frac{1}{113} = \frac{2713}{113} = 25$, ad quam itaque diameter est ut 8 : 25.

Demonstratio alia. Peripheria Metiana diametri 8 est $\frac{2840}{113}$ & defectiva investigata per rationem 10 : 31, est $\frac{248}{1}$, quæ reducta ad denominatorem communem 1130, produnt æquivalentes $\frac{28400}{1130}$ & $\frac{28024}{1130}$, quarum posterior ablata expriore, relinquit differentiam $\frac{376}{1130}$ conflata ex excessu & defectu peripheriarum æquivalentium: nam quoniam ob reductionem peripheriarum ad denominatorem communem 1130, termini excessus, si reverà dantur, per 10 & termini defectus per 113 in æquivalentibus continentur multiplicati; evidens est, earundem excessum per 10 & defectum per 113 esse debere reducibiles. Jam cum partes $\frac{376}{1130}$ & $\frac{376}{1130}$, è quibus differentia $\frac{376}{1130}$ est conflata, sint reducibiles, prior per 10 & posterior per 113; dubitari nequit, quin prior sit excessus & posterior defectus peripheriarum æquivalentium. Reducto itaque excessu $\frac{376}{1130}$ per denominatorem 10 periph: defectivæ, prodit excessus $\frac{376}{113}$ peripheriæ Metianæ; reducto autem defectu $\frac{376}{1130}$ per denominatorem 113 Metianæ, innotescit defectus $\frac{1}{113}$. Ergo peripheria vera est $\frac{2840}{113} - \frac{1}{113} = \frac{2839}{113} = 25$; vel $\frac{248}{1} + \frac{1}{113} = \frac{28025}{113} = 25$, ad quam igitur diameter est, ut 8 : 25.

THEO-

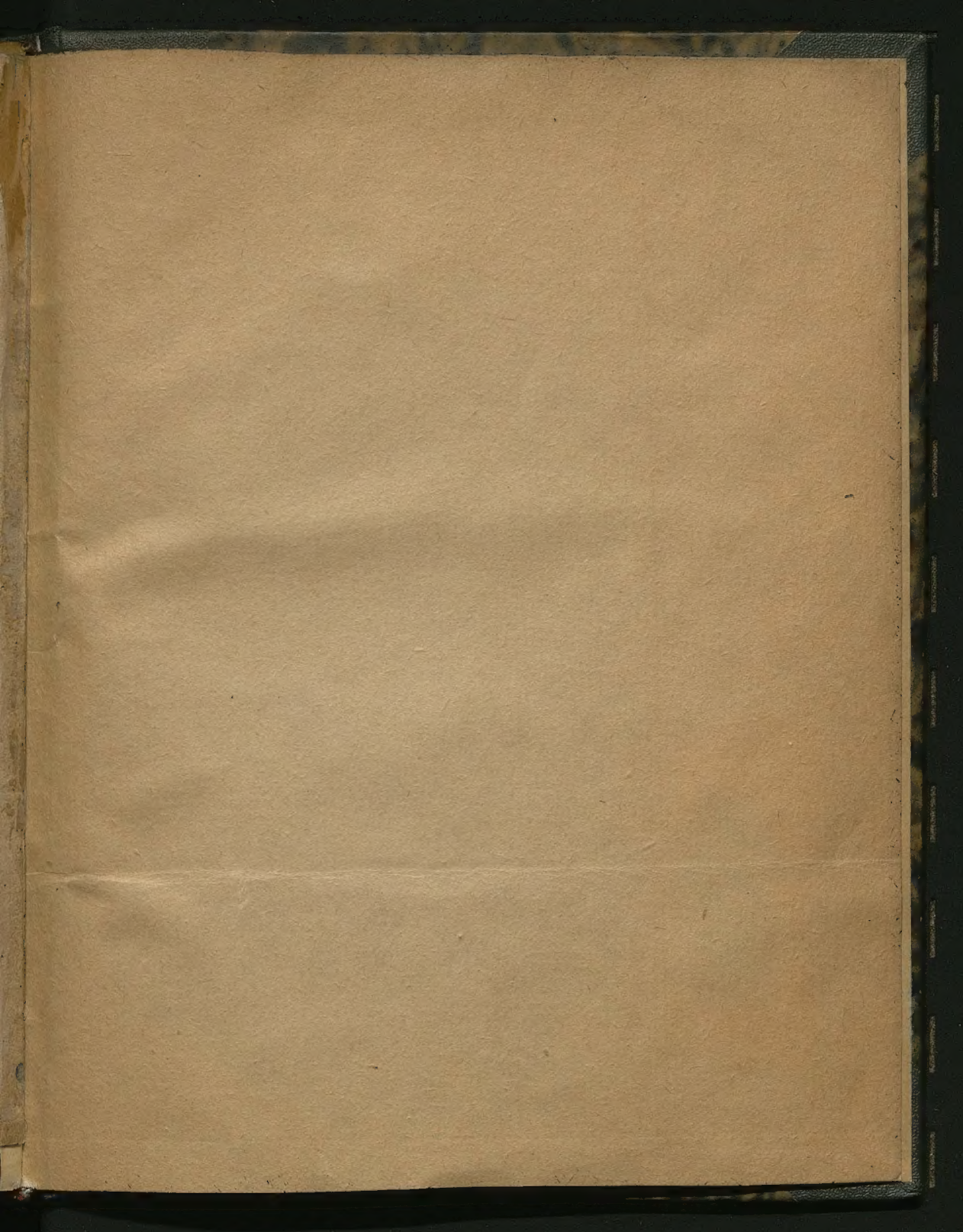
THEOREMA II. *Peripheria diametri 8 per rationem Ludolphii* 100:314 *inventa peccat* $\frac{12}{100}$ *diametri in excessu.*

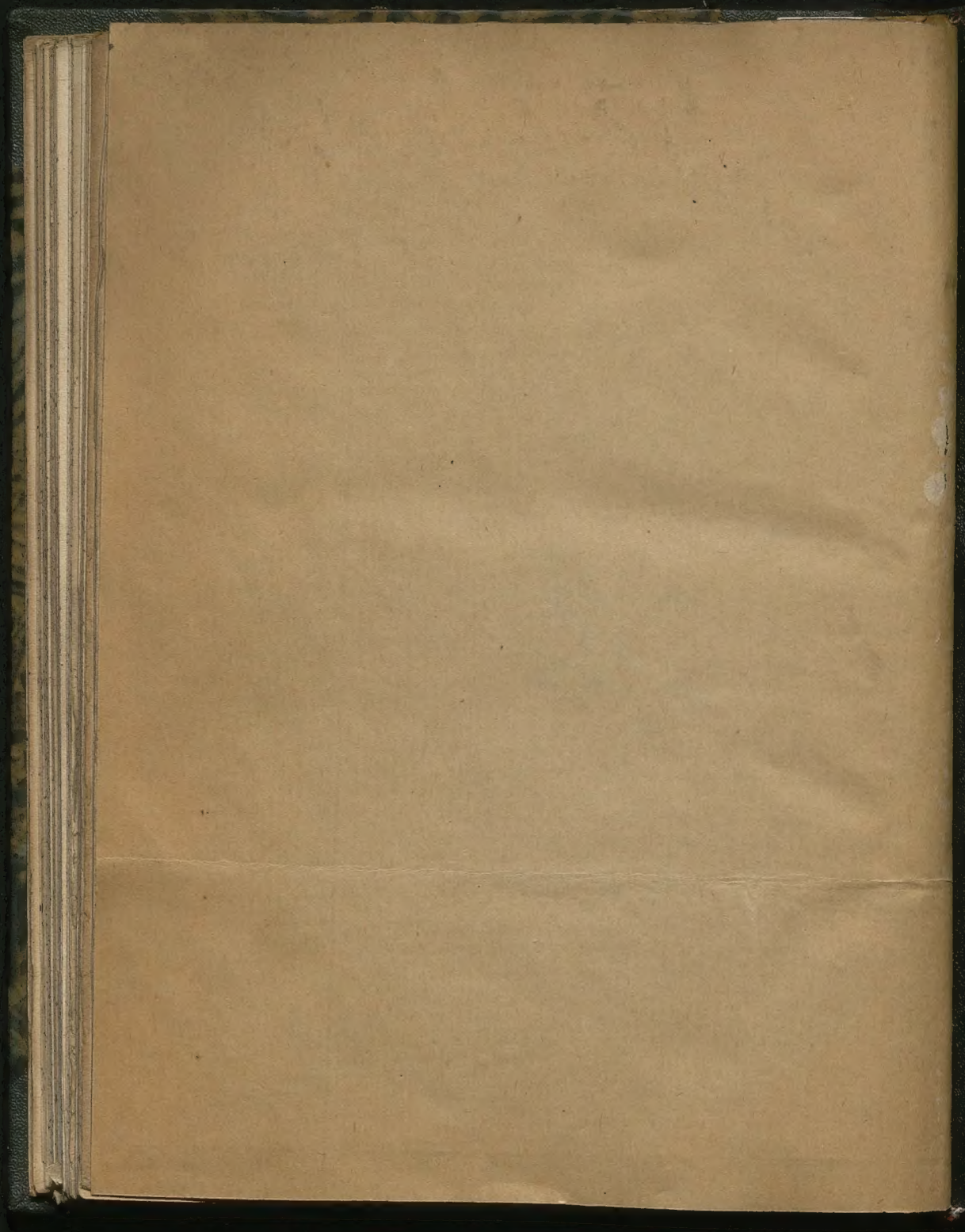
Demonstratio. Peripheria Ludolphina diametri 8 est $\frac{2532}{100}$, & defectiva per rationem 9:28 reperta, est $\frac{224}{9}$, quibus reductis ad denominatorem communem 900, emergunt æquivalentes $\frac{2532}{900}$ & $\frac{22400}{900}$, quæ ex se demptæ, relinquant differentiam $\frac{2532}{900}$ conflata ex excessu & defectu peripheriarum æquivalentium: nam quoniam ob reductionem peripheriarum ad denominatorem communem 900, termini excessus, si dantur, per 9, & termini defectus per 100 in peripheriis æquivalentibus continentur multiplicati; debet differentia $\frac{2532}{900}$ constare ex partibus reducibilibus per 9 & 100; sed partes $\frac{100}{900}$ & $\frac{100}{900}$, ex quibus differentia est conflata, sunt reducibiles, prior per 9 & posterior per 100: ergo pars prior est excessus & posterior defectus peripheriarum æquivalentium. Reducto itaque excessu $\frac{100}{900}$ per denominatorem 9 defectivæ, emergit excessus peripheriæ Ludolphinæ $\frac{12}{100}$ & reducto defectu $\frac{100}{900}$ per denominatorem 100 Ludolphina prodit defectus $\frac{1}{100}$. Ergo peripheria vera est $\frac{2532}{100} - \frac{12}{100} = \frac{2520}{100} = 25$; vel $\frac{224}{9} + \frac{1}{9} = \frac{225}{9} = 25$, ad quam diameter est, ut 8:25.

THEOREMA III. *Peripheria diametri 8 per rationem Archimedis* 71:223 *inventa, peccat in excessu* $\frac{9}{71}$ *diametri.*

Demonstratio. Peripheria Archimedeæ diametri 8 est $\frac{1784}{71}$ & defectiva per rationem 20:61 indagata, est $\frac{458}{20}$, quæ reductæ ad denominatorem communem 1420, sistunt æquivalentes $\frac{17840}{1420}$ & $\frac{34618}{1420}$, quarum posterior ablata ex priore, relinquit differentiam $\frac{10212}{1420}$. Jam cum ob reductionem peripheriarum ad denominatorem communem 1420, termini excessus per 20 & termini defectus per 71 in peripheriis æquivalentibus contineantur multiplicati; debent partes differentiæ, si hæc reverà conflata est ex excessu & defectu peripheriarum æquivalentium, esse reducibiles per 20 & 71; sed partes $\frac{10212}{1420}$ & $\frac{812}{1420}$, è quibus differentia $\frac{10212}{1420}$ est composita, sunt reducibiles, prior per 20 & posterior per 71: ergo prior est excessus & posterior defectus peripheriarum æquivalentium. Reducendo itaque excessum $\frac{10212}{1420}$ per denominatorem 20 periph: defectivæ, prodit excessus $\frac{9}{71}$ Archimedeæ; reducendo autem defectum $\frac{812}{1420}$ per denominatorem 71 peripheriæ Archimedeæ, innotescit defectus $\frac{12}{100}$. Ergo peripheria vera est $\frac{1784}{71} - \frac{9}{71} = \frac{1775}{71} = 25$; vel $\frac{458}{20} + \frac{12}{100} = \frac{100}{100} = 25$, ad quam igitur diameter est, ut 8:25.

Corollarium. Quoniam excessus & defectus periph: falsarum crescunt & decrescunt in ratione diametrorum, & excessus periph: diametri 8 est $\frac{12}{100}$; debet excessus periph: diametri 1 esse octies minor, nempe: $\frac{12}{800} = \frac{3}{200}$. Ergo ratio Ludolphii 100:314 peccat in excessu $\frac{3}{200}$ diametri. Eodem modo demonstratur, rationem Metii $\frac{11}{96}$ & Archimedis $\frac{9}{71}$ diametri peccare in excessu: hinc mirandum est, quod Viri, qui mentis oculo ceteris videre deberent perspicacius, Ludolphii libro de Circulo & adscriptis adeò fuerint incantati, ut errores tam trabales advertere nequiverint.





Biblioteka Jagiellońska



stdr0026012

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